

AMENDMENT TO THE CLAIMS

What is claimed is:

1. (currently amended) A disposable diamond die comprising:

a die core comprised of diamond; and

a ring container system comprising at least two pre-stressed rings of increasing diameter placed around the die core, the pre-stressed condition of the rings establishing a deformed fit between the rings and the ring container system further providing a compression against the die core,

wherein the at least two rings form a container housing the die core; and

a housing comprising a housing container and a cap surrounding the two rings and die core.
2. (previously presented) The disposable die of claim 1, wherein the at least two rings comprise split rings, washers, sleeves, bands, wires, braids, or a combination thereof.
3. (previously presented) The disposable die of claim 1, wherein the diamond comprises synthetic diamond, natural diamond, polycrystalline diamond, or a mixtures thereof.
4. (original) The disposable die of claim 3, wherein the die is comprised of polycrystalline diamond.
5. (original) The disposable die of claim 1, wherein at least one ring is comprised of a metal, a fiber reinforced composite, or a combination thereof.

6. (previously presented) The disposable die of claim 1, further comprising a retaining material positioned between the die core and a first of the rings or between a pair of consecutive rings.
7. (previously presented) The disposable die of claim 6, wherein the retaining material comprises a spot weld, a thin metal film, a foil, an adhesive foil, a coating, an adhesive, a wedge, a lubricant, or a combinations thereof.
8. (currently amended) The disposable die of claim 46, wherein the retaining material is located between each of the die core and a first ring, and each pair of consecutive rings.
9. (original) The disposable die of claim 1, wherein the die has a diameter of about 1 to about 50 mm.
10. (original) The disposable die of claim 1, wherein the die core and the rings have mating geometrical features.
11. (original) The disposable die of claim 1, wherein the die core is generally cylindrical in shape.
12. (currently amended) A method for forming a disposable diamond die assembly, comprising the steps of:

providing a die core comprised of diamond;

providing at least two rings of increasing diameter around the die core forming a ring container system, the die core and the ring container system each having mating geometrical features by establishing a pre-stressed condition between the at least two rings to form a pre-stressed ring container system;

securing the die core in the pre-stressed ring container system by contacting the respective mating geometrical features between the ring container system and die core and causing a deformation in at least one of the mating geometrical features, the deformation providing mechanical compression forces sufficient to secure the die core in the ring container system; and

placing the ring container system with the secured die core into a container assembly.

13. (original) The method of claim 12, wherein the securing comprises press fitting of the mating geometric features.

14. (original) The method of claim 12, wherein the securing comprises shrink fitting of the mating geometric features.

15. (previously presented) The method of claim 12, wherein the mating geometric features have dimensions that creates an interference fit.

16. (previously presented) The method of claim 12, wherein the diamond comprises synthetic diamond, natural diamond, polycrystalline diamond, or a mixtures thereof.

17. (previously presented) The method of claim 12, wherein the at least two rings comprise at least one of a metal and a fiber reinforced composite.
18. (original) The method of claim 12, further comprising the step of heat-treating the die at a temperature of at least about 300°C.
19. (original) The method of claim 12, further comprising providing a retaining device positioned between the die core and a first of the rings.
20. (original) The method of claim 19, wherein the retaining device comprises one or more of a spot weld, a thin metal film, a foil, an adhesive foil, a wedge, a lubricant, and a combination thereof.